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(54) **A Cosmetic or Skin Care Composition Containing a Film-Forming Polymer;
A Method of Applying Make-up and Non-Therapeutic Treatments**

(57) The present invention pertains to a composition capable of being applied to skin, to semi-mucous tissue, and/or to mucous membranes, while including a polymer system which is suitable for forming a coating whose hardness level is less than 50.

Said invention likewise pertains to a process for applying make-up and non-therapeutic treatments for skin, semi-mucous tissue, and/or mucous membranes, consisting of application of a composition according to the invention upon said tissues.

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Description

The present invention relates to a composition, notably a cosmetic composition which is capable of being applied to skin, semi-mucous tissue, and/or mucous membranes, with said composition specifically consisting of a polymer system and being suitable for use as a make-up product.

Compositions intended for application upon skin, semi-mucous tissue, and/or mucous membranes, such as lipstick or foundations for make-up, are usually available in the form of sticks, soft creams or pourable creams, and they include oily substances such as oils, cream-like compounds and/or waxes, and a particular phase usually consisting of fillers and pigments.

When the aforementioned compositions are applied to the previously cited surfaces, they are nonetheless characterized by the disadvantage of being transferred. By this particular concept, it is to be understood that these compositions are capable of being at least partially deposited upon certain items with which they may enter into contact, such as glasses, cups, clothing, or skin, for example. When a given composition is deposited, traces of it are left upon the respective surface.

Relatively unsatisfactory adherence of a given composition to skin, semi-mucous tissue, or mucous membranes therefore ensues, and a need for regularly repeating application of the respective composition arises.

Moreover, the appearance of unacceptable traces upon certain items of apparel, and especially upon shirt collars, may deter some women from using make-up of this kind.

Another difficulty arising from the aforementioned compositions consists of the problem of smearing. It has been observed, in fact, that some compositions tend to spread into crevices and/or wrinkles upon the skin, as in the instance of make-up foundations, into small wrinkles around the lips, as in the instance of lipstick, and into the corners of eyelids, as in the instance of eye shadows. Especially in terms of eye shadows, it has also been possible to observe the appearance of streaks within make-up, which are caused by movements of the eyelids. It has likewise been observed that eyeliners may also run. All of these phenomena create unattractive results whose elimination is obviously desirable.

For a number of years, numerous specialists in cosmetology have been interested in "nontransferable" cosmetic compositions, especially lipstick or make-up foundations. "Nontransferable" lipstick compositions containing from 1% to 70% liquid silicone resin with repetitive silicate combinations, from 10% to 98% volatile silicone oil, and powdered fillers have therefore been considered. Coatings which form upon the lips after evaporation of silicone oil are nevertheless characterized by the disadvantage of becoming uncomfortable over the course of time (sensation of dryness and sticking).

There are also "nontransferable" lipsticks which contain volatile silicones and silicone resins with attached esterified chains containing at least twelve carbon atoms. The lipstick coating is particularly characterized by the disadvantage of not offering comfort after being applied, especially in terms of its being too dry. Hence, there is a continuing need for a cosmetic composition which is relatively nontransferable or wholly nontransferable; in other words, it must be a "nontransferable" composition while still possessing suitable cosmetic properties, and, in particular, it must allow a flexible and uniform coating to be obtained.

The purpose of the present invention is to provide a composition which allows obtaining of a coating possessing extremely suitable adherence properties, which is nontransferable, without producing traces upon any surface with which it may come into contact and without smearing over the course of time.

Accordingly, one of the objects of the present invention is a composition which is capable of being applied to a medium chosen among skin, semi-mucous tissue, and/or mucous membranes, notably a lipstick composition, which is to include a polymer system containing a film-forming free radical polymer. The glass transition temperature (Tg) for the aforementioned polymer system must be less than or equivalent to 10° C., and the minimum film-forming temperature (MFIT) must be less than or equal to 15° C., with said polymer system being capable of forming a coating whose hardness level shall be less than or equal to 50.

Another object of the invention is a lipstick composition containing a polymer system which is capable of forming a coating upon the lips and of following the lips' movements, with said polymer system consisting of a film-forming free radical polymer which is obtained by copolymerization of C₁-C₈ alkyl methacrylate monomers which are ultimately combined with acrylic acid, styrene, and α -methyl styrene.

Another object of the invention is a method of applying make-up or nontherapeutic treatments to a surface chosen among skin, semi-mucous tissue and/or mucous membranes, and particularly to the lips upon an individual's face, with said method consisting of applying a polymer system to said surface or of applying a composition containing a polymer system of the previously defined type.

Another object of the invention is use of said polymer system or of a composition which contains a system of this kind for manufacturing compositions intended for therapeutic treatment of skin, semi-mucous tissue, and/or mucous membranes, and especially the lips on an individual's face.

Another object is use of the aforementioned polymer system within compositions which are capable of being applied to skin, semi-mucous tissue, and/or mucous membranes in order to reduce transferring and/or spreading of the respective composition.

It has been observed that compositions to which the invention pertains can be applied easily and that they can be quickly and uniformly spread upon skin, semi-mucous tissue, and mucous membranes, and especially upon the lips on an individual's face.

A particularly advantageous application for a composition according to the invention exists within the domain of care and/or beautification of skin, mucous membranes, and/or semi-mucous tissue. Mucous membranes specifically refer to inner portions of the lower eyelid, while semi-mucous tissue more specifically refers to the lips upon an individual's face.

A composition according to the invention allows obtaining of a uniform coating which possesses a light texture and can be worn comfortably throughout the day. This coating is soft, movable, elastic, and flexible upon the skin, while retaining proper cohesion. It follows movements of the surface where it has been applied, without cracking and/or loosening. In particular, it adheres perfectly to the lips. Hence, the coating which is obtained after applying said composition to the respective surface offers proper adherence to the respective surface. A composition according to the invention is likewise suitable for body decoration. A highly specific application for a composition according to the invention exists within the domain of make-up products for the lips, such as lipstick in particular. Another advantageous application also exists within the domain of eye-liners. Moreover, the coating which is obtained may be extremely glossy, or more or less dull, according to the nature of ingredients within the respective composition, with the result that there is a broader range of glossy or non-glossy make-up products, according to preferences.

A composition according to the invention therefore includes a polymer system containing at least one synthetic film-forming polymer of the free radical type.

A free radical polymer is to be understood as a polymer obtained by polymerizing unsaturated monomers, especially ethylene, with each monomer being capable of homopolymerization (in contrast to polycondensates).

Polymers of the free radical type can include vinyl polymers or copolymers specifically, or acrylic polymers specifically.

Vinyl polymers can be obtained from polymerization of unsaturated ethylenic monomers where there is at least one acid group, and/or from esters of these acid monomers and/or amides of said acid monomers.

It is preferable to use anionic free radical polymers, namely monomers where there is at least one monomer with an acid group.

As a monomer containing an acid group, it is possible to use unsaturated ethylenic α -, β - carboxylic acids such as acrylic acid, methacrylic acid, crotonic acid, maleic acid, and itaconic acid, as well as 2-acrylamide 2-methylpropanesulfonic acid. Using (meth)acrylic acid and crotonic acid is preferable, while (meth)acrylic acid is more preferable.

It is advantageous for esters of acid monomers to be chosen among esters of (meth)acrylic acid (likewise known as (meth)acrylates), especially alkyl (meth)acrylates and C_1 - C_{20} alkyl (meth)acrylates, and preferably C_1 - C_8 alkyl methacrylates, or aryl (meth)acrylates, especially C_6 - C_{10} aryl (meth)acrylates, or hydroxyalkyl (meth)acrylates, especially C_2 - C_6 hydroxyalkyl (meth) acrylates.

Among alkyl (meth)acrylates, it is possible to cite methyl methacrylate, ethyl methacrylate, butyl methacrylate, isobutyl methacrylate, ethyl-2-hexyl methacrylate, and lauryl methacrylate.

Among hydroxyalkyl (meth)acrylates, it is possible to cite hydroxyethyl acrylate, 2-hydroxypropyl acrylate, hydroxyethyl methacrylate, and 2-hydroxypropyl methacrylate.

Among aryl (meth)acrylates, it is possible to cite benzyl acrylate and phenyl acrylate.

Particularly preferable (meth)acrylic acid esters include alkyl (meth)acrylates.

In accordance with the present invention, alkyl groups within esters may be fluorinated or perfluorinated. In other words, a portion or the entirety of the hydrogen atoms within an alkyl group may be replaced by fluorine atoms.

Examples of amides of acidic monomers which can be cited include (meth)acrylamides, and especially N-alkyl(meth)acrylamides, notably C_2 - C_{12} alkyl. N-alkyl (meth)acrylamides which can be cited include N-ethylacrylamide, N-t-butylacrylamide, and N-t-octylacrylamide.

Vinyl polymers may also be obtained from homopolymerization or copolymerization of monomers which are to be selected among vinyl esters and styrene monomers. In specific terms, these monomers may be polymerized with acid monomers and/or their esters and/or their amides, such as those which have been cited previously.

As examples of vinyl esters, it is possible to cite vinyl acetate, vinyl neodecanoate, vinyl pivalate, vinyl benzoate, and vinyl-t-butyl benzoate.

As styrene monomers, it is possible to cite styrene and alpha-methyl styrene.

The list of monomers which has been provided is nonrestrictive, and it is possible to use any monomers within the categories of acrylic and vinyl monomers which may be known to persons with experience in this field.

In accordance with the present invention, it is preferable for a copolymer selected among (meth)acrylic acid/(meth)acrylate, (meth)acrylic acid/(meth)acrylate/styrene, (meth)acrylic acid/styrene, (meth)acrylic acid/ α -methyl styrene, as well as (meth)acrylate copolymers, to be used as a film-forming polymer. It is preferable to use a

copolymer obtained from copolymerization of C₁-C₈ alkyl methacrylate monomers, which may possibly be combined with acrylic acid, styrene, and α -methyl styrene.

When the polymer which is to be used in accordance with the invention includes monomers containing a sulfifiable group (a carboxylic acid group, for example), the polymer can be wholly or partially neutralized by means of a neutralizing agent (in this instance, a base, for the purpose of neutralizing the acid group) which is well-known to persons with experience in this field. Moreover, neutralization can promote dispersion of the polymer, especially within water, or it can even stabilize dispersion.

It is likewise possible to cite polymers obtained from polymerization of radicals from one or more monomers containing radicals internally and/or partially at the surface, preexisting particles of at least one polymer selected from a group consisting of polyurethanes, polyureas, polyesters, polyesteramides and/or alkyd resins. These polymers are usually referred to as hybrid polymers.

It is advantageous for the film-forming free radical polymer within the polymer system to be present within compositions to which the present invention pertains either in a solubilized (dissolved) form, or in a dispersed form, namely in the form of a particle dispersion, particularly within a cosmetically or dermatologically acceptable medium. It is preferable for the film-forming free radical polymer to be present in the form of an aqueous dispersion of particles of said polymer.

An aqueous dispersion containing one or more film-forming polymers can be prepared by technically experienced persons on the basis of general knowledge. The proportion of dry material within the aforementioned aqueous dispersions according to the present invention should be on the order of 5% to 60% according to weight, and preferably 30% to 40% in relation to the total weight of said dispersion.

The size of polymer particles within an aqueous dispersion can be situated between 10 nm and 500 nm, but it is preferably situated between 20 nm and 150 nm.

It is advantageous for the hardness of the coating obtained after applying a composition according to the invention to a surface which must be treated to be less than or equal to approximately 35, and preferably less than or equal to approximately 20. In a preferred embodiment, the hardness of this coating shall exceed 1 and, in particular, it shall exceed 5. Preferably, a coating whose hardness is situated between approximately 10 and 20, and especially between 13 and 18, specifically offers highly favorable results in terms of adherence of said coating to the previously cited surfaces, and particularly to the lips. The hardness of this coating is to be measured according to conditions described prior to examples of the present invention.

It is advantageous for the glass transition temperature (T_g) of the polymer system according to the invention to be less than or equal to approximately 0° C., but preferably less than or equal to approximately -10° C., and preferably even lower, or equal to approximately -20° C., and, even more preferably, less than or equal to approximately -30° C.

It is advantageous for the minimum film-forming temperature (MFFT) of a polymer system according to the invention to be less than or equal to approximately 12° C., preferably less than or equal to approximately 8° C., or preferably less than or equal to 5° C., and, even more preferably, less than or equal to 2° C.

Particularly preferable polymer systems are those which possess the following characteristics:

- T_g from -50° C. to -15° C.; MFFT less than or equal to 5° C.; hardness less than or equal to 25;
- T_g from -50° C. to -30° C.; MFFT from -5° C. to 5° C.; hardness from 10 to 20 and preferably from 13 to 18;
- T_g from 5° C. to 10° C.; MFFT from 2° C. to 8° C.; hardness from 3 to 10.

When a composition containing a polymer system of this kind is applied to the lips, it provides a coating which is characterized by highly satisfactory adherence to the lips. This coating follows movement of the lips without loosening or cracking.

According to one embodiment of a composition to which the invention pertains, the polymer system consists solely of one or more film-forming free radical polymers which possess characteristics of the previously described type.

When a film-forming free radical polymer does not, by itself, allow a coating with the previously indicated characteristics to be obtained, it is possible to add a compound whose function is to modify the properties of the aforementioned polymer so as to obtain the desired polymer system. Moreover, in terms of another embodiment of a composition according to the invention, it is possible to add at least one auxiliary film-forming agent to a film-forming free radical polymer, so as to allow obtaining of a coating possessing characteristics such as those which have been described heretofore. The auxiliary film-forming agent specifically allows obtaining of a soft, flexible coating which shall follow movement of the surface to which the coating is to be applied, and especially the lips. In this instance, the polymer system shall include a combination of one or more film-forming free radical polymers and at least one auxiliary film-forming agent.

An auxiliary film-forming agent of this kind can be selected among any of the compounds known to technically experienced persons as being suitable for accomplishing the desired function, and, in particular, it can be selected among plasticizers. Moreover, when a polymer system according to the invention contains at least one aqueous dispersion of particles of a film-forming polymer, the auxiliary film-forming agent can also be selected among coalescing agents. This auxiliary agent may be water-soluble or insoluble in water, and it may be provided in the form of an aqueous dispersion when necessary.

In particular, it is possible to cite conventional plasticizers or coalescing agents, either individually or in compositions, such as:

- Glycols and their derivatives, such as diethylene glycol ethylether, diethylene glycol methylether, diethylene glycol butylether, or even diethylene glycol hexylether, ethylene glycol ethylether, ethylene glycol butylether, and ethylene glycol hexylether;
- Glycerol esters;
- Propylene glycol derivatives, and especially propylene glycol phenylether, propylene glycol diacetate, dipropylene glycol butylether, tripropylene glycol butylether, propylene glycol methylether, dipropylene glycol ethylether, tripropylene glycol methylether, diethylene glycol methylether, and propylene glycol butylether;
- Acid esters, and especially carboxylic acid esters, such as citrates, phthalates, adipates, carbonates, tartrates, phosphates, and sebacates;
- Oxyethylenated derivatives, such as oxyethylenated oils, notably vegetable oils such as castor oil; silicone oils;
- Water-soluble polymers with a low glass transition temperature, namely below 25° C., and preferably below 15° C.

The amount of an auxiliary film-forming agent must be determined by a technically experienced person on the basis of his general knowledge, so as to obtain a polymer system which is to provide a coating possessing the desired mechanical properties, while the respective composition must retain cosmetically acceptable properties.

When the film-forming polymer within a polymer system consists of an aqueous dispersion of a 100% acrylic polymer, namely when it only contains monomers derived from (meth)acrylic acid (which includes esters and amides) and does not contain other monomers of the styrene type or vinyl esters, the composition according to the invention shall be formulated without glycerin as a plasticizer according to a weight ratio of approximately 4.17% for glycerin/dry material within the acrylic polymer dispersion.

The composition may include from 1% to 60% dry materials constituting film-forming polymers by weight, and preferably from 5% to 40% by weight, in relation to the total weight of said composition.

In order to apply the present invention, it is therefore necessary for the polymer system to allow a coating to be formed upon the surface onto which it is to be deposited.

Furthermore, in a preferred embodiment, the aforementioned polymer system may be selected so as to allow obtaining of a coating possessing:

- A Young's modulus below approximately 200 Mpa, preferably below approximately 100 Mpa, and preferentially below 85 Mpa. It shall be advantageous for the Young's modulus to be higher than 1 Mpa.
- And/or elongation strength exceeding approximately 200%, and, in a preferential manner, greater than 300%.

Methods of measuring tensile strength and Young's modulus (elasticity modulus) are to be described before respective examples of the present invention.

A composition may also include at least one water-soluble dye and/or at least one pigment, which are to be used in the conventional manner within the field of cosmetics and make-up. Pigments are to be understood as consisting of white or colored inorganic or organic particles which are insoluble within the respective medium and are intended for dyeing a given composition and/or for opacifying it. Pigments may also be present within compositions in a proportion of 0 to 20%, according to the weight of the final composition, and preferably in a proportion of 1% to 5%. They may be white or colored, inorganic and/or organic, with customary or nanometric sizes. Among inorganic pigments and nanopigments, it is possible to cite titanium, zirconium, or cerium oxides, as well as zinc, iron, or chromium oxides, and ferric blue. Among organic pigments, it is possible to cite carbon black, and lacquers containing barium, strontium, calcium, and aluminum. Among water soluble dyes, it is possible to cite the usual dyes within the respective field, such as poppy red disodium salts, alizarin green disodium salts, quinoline yellow, amaranth trisodium salt, tartrazine disodium salt, rhodamine monosodium salt, fuchsine disodium salt, and xanthophyll.

It is also possible for any known additive to be introduced into the composition according to the invention, such as thickening agents, for example clays, gums, silicas, cellulose derivatives, synthetic polymers such as acrylic polymers or associative polymers of the polyurethane type, natural gums such as xanthane gum, spreading agents, waxes, dispersants, preservatives, foam prevention agents, moistening agents, ultraviolet filters, fragrances, fillers, cosmetic or pharmaceutical active principles, moisturizers, vitamins and their derivatives, or biological substances and their derivatives. Of course, technically experienced persons shall endeavor to select the possible additive or additives and/or their amount in such a manner that advantageous properties of a composition according to the invention shall not be altered or shall not be substantially altered by the planned addition.

A composition according to the invention may exist in a fluid, gelified, or semi-solid form, or as a spreadable cream, or even as a solid item such as a stick or rod. In the instance of a non-solid formula, a composition according to the invention may possess a viscosity level from 0.05 Pa.s to 20 Pa.s (50 cPs to 20,000 cPs), and especially from 0.05 Pa.s to 10 Pa.s, measured at 25° C. by means of a mobile 4 LVT Brookfield unit.

A specific application exists for such a composition as a make-up product, notably as lipstick, as a foundation, as rouge for the cheeks, or as an eye-liner, or even as a body decoration product of the same type as temporary or semi-permanent tattoos. It is also possible to envision an application within the area of beauty care compositions, notably for treating the lips, sun protection or tanning compositions, skin care compositions, or even pharmaceutical compositions which are to be applied to the skin, semi-mucous tissue, and/or mucous membranes.

The invention shall be explained in greater detail by means of the examples which appear subsequently.

A/Measuring Hardness

Hardness of coatings is to be measured in accordance with ASTM Standard D-43-66, or French Standard NF-T 30-016 (October, 1981) by means of a Persoz pendulum.

The coating deposited upon the respective surface must possess a thickness of approximately 300 microns before drying. After drying for twenty-four hours at 30° C., with 50% relative humidity, a coating with a thickness of 100 microns shall be obtained. Subsequently, its hardness can be measured at 30° C. with 50% relative humidity.

B/Measuring Elongation

Elongation of the coating which is to be obtained shall be measured in accordance with the ASTM Standard D-2370-92 within Volume 06.01, "Standard Test Method for Tensile Properties of Organic Coatings."

C/Measuring Young's Modulus (or the elasticity modulus)

Young's modulus (the elasticity modulus) is to be measured in accordance with the ASTM Standard D 2370-92 within Volume 06.01, "Standard Test Method for Tensile Properties of Organic Coatings."

The coating deposited upon the respective surface must possess a thickness of approximately 300 microns before drying. After drying for seven days at 21° C. under 50% relative humidity, it is possible for a coating with a thickness of approximately 100 microns to be obtained. The samples which are to be measured must possess a width of 5 mm and a thickness of 100 microns. The distance between clamps is to be 25 mm. The pulling speed is to be 1,000 mm per minute.

Example 1: (Comparative)

The strength of coatings obtained with different aqueous dispersions of acrylic resins to which 2% pigment by weight in relation to the total weight of the respective dispersion was measured and compared. The functioning of each coating when it was applied to the lips was observed visually.

Analysis was completed with four polymers according to the invention (P1 to P4) and three polymers which were not included within the invention (P'a to P'c).

The following results were obtained:

Polymer	Tg (° C.)	MFPT (° C.)	Hardness	Result
P1	-34	0	15.4	No cracking
P2	8	5	6.8	No cracking
P3	0	10	33	No cracking
P4	-23	<0	19.8	No cracking
P'a	9	<0	79	Rapid cracking
P'b	24	14	27.5	Rapid cracking
P'c	-	20	80.3	Rapid cracking

P1: A-1070 Neocryl acrylic polymer from ZENECA
 P2: Dow Latex 432 acrylic styrene polymer from DOW CHEMICAL
 P3: BT-62 Neocryl acrylic styrene polymer from ZENECA
 P4: A-523 Neocryl acrylic polymer from ZENECA
 P'a: A-1052 Neocryl acrylic polymer from ZENECA
 P'b: Dow Latex 424 acrylic styrene polymer from DOW CHEMICAL
 P'c: BT-67 Neocryl acrylic polymer from ZENECA.

The results which were obtained demonstrate that only polymers according to the invention, namely polymers whose glass transition point is less than or equal to 10° C., whose film-forming temperature is less than or equal to 15° C., and whose hardness is less than or equal to 50, offer suitable adherence to the lips, inasmuch as the coating, which is flexible, can follow the movements of the lips and can be worn comfortably. In addition, the coating placed upon the lips shall be nontransferable.

Example 2:

A fluid composition which can be applied to the lips and possesses the following composition is to be prepared:

- An aqueous dispersion of the acrylic/styrene polymer which is sold under the designation DOW LATEX 432 by the DOW CHEMICAL COMPANY: 25 g MA
- An aqueous dispersion of fluorinated wax (MICROPOWDERS' MICRODISPERSION 411): 5 g MA
- Pigment: 2 g
- Glycerin: 1.25 g
- Water, q.s.p.: 100 g

This composition is applied to the lips, and a flexible coating which does not crack and follows the movement of the lips without loosening shall be obtained. Moreover, this coating is nontransferable.

Example 3:

A fluid lipstick with the following composition is to be prepared:

- An aqueous dispersion of the acrylic polymer NEOCRYL A-523, from the company known as ZENECA: 20 g MA
- A fluorinated wax microdispersion (MICROPOWDERS' MICRO DISPERSION 411): 2.5 g MA
- Glycerin: 1.875 g
- Thickener: 0.5 g
- Pigment: 3 g
- Water, q.s.p.: 100 g

This composition can be spread upon the lips easily, and it leaves a flexible coating which does not crack, can be worn comfortably, and is nontransferable.

Example 4:

A fluid lipstick with the following composition is to be prepared:

- An aqueous dispersion of acrylic/styrene polymer (NEOCRYL A-1052 from ZENECA: 20 g MA
- Acetylbutylcitrate: 2.5 g
- Pigment: 2 g
- Glycerin: 1.25 g
- Water, q.s.p.: 100 g

A composition which is easy to apply to the lips is obtained. The coating which is obtained is nontransferable, and it possesses suitable strength: it does not crack, and it follows the movements of the wearer's lips.

Claims

1. A composition which is capable of being applied to skin, semi-mucous tissues, and/or mucous membranes, characterized by the fact that it consists of a polymer system containing a film-forming free radical polymer, with said polymer system possessing a glass transition temperature (Tg) which is less than or equal to 10° C. and a minimum film-forming temperature (MFFT) which is less than or equal to 15° C., with said polymer system being capable of forming a coating whose hardness level is less than 50.

2. A composition according to Claim 1, characterized by the fact that the glass transition temperature is less than or equal to 0° C., and preferably less than or equal to -20° C.
3. A composition according to Claim 1 or Claim 2, characterized by the fact that the minimum film-forming temperature is less than or equal to 8° C., and preferably less than or equal to -5° C.
4. A composition according to any of the preceding claims, characterized by the fact that the hardness level of the coating is less than or equal to 35, and preferably less than or equal to 20.
5. A composition according to any of the preceding claims, characterized by the fact that the hardness level of the coating shall vary from 10 to 20 and preferably from 13 to 18.
6. A composition according to any of the preceding claims, characterized by the fact that the glass transition temperature of the polymer system shall vary from -50° C. to -30° C., with the minimum film-forming temperature being less than or equal to 5° C., while hardness shall be less than or equal to 25.
7. A composition according to any of the preceding claims, characterized by the fact that the glass transition temperature of the polymer system shall vary from -50° C. to -15° C., with the minimum film-forming temperature varying from -5° C. to 5° C., while hardness shall vary from 10 to 20.
8. A composition according to any of the claims identified as 1 and 3 to 5, characterized by the fact that the glass transition temperature of the polymer system shall vary from 5° C. to 10° C., with the minimum film-forming temperature varying from 2° C. to 8° C., while hardness shall vary from 3 to 10.
9. A composition according to any of the preceding claims, characterized by the fact that the free radical polymer is a vinyl polymer.
10. A composition according to any of the preceding claims, characterized by the fact that the free radical polymer shall be obtained from polymerization of monomers selected among the group consisting of α -, β - unsaturated ethylenic carboxylic acids, (meth)acrylates, (meth)acrylamides, vinyl esters, and styrene monomers.
11. A composition according to any of the preceding claims, characterized by the fact that the free radical polymer shall be selected from the group of copolymers consisting of (meth)acrylic acid/(meth)acrylate, (meth)acrylic acid/(meth)acrylate/styrene, (meth)acrylic acid/styrene, (meth)acrylic acid α -methyl styrene, and alkyl (meth)acrylate copolymers.
12. A composition according to any of the preceding claims, characterized by the fact that the free radical polymer shall be a copolymer obtained by copolymerization of C_1 - C_8 alkyl methacrylate monomers, which may be combined with acrylic acid, styrene, and α -methyl styrene when necessary..
13. A composition according to any of the preceding claims, characterized by the fact that said composition shall be a cosmetic or skin care composition.
14. A make-up composition characterized by the fact that said composition shall be consistent with any of the preceding claims.
15. A composition according to Claim 14, characterized by the fact that said composition shall be a lipstick, eye-liner, foundation, eye shadow, or rouge composition.
16. A lipstick or lip care composition, characterized by the fact that said composition shall be consistent with any of the preceding claims.

17. A lipstick composition containing a polymer system capable of forming a coating upon the lips and of following the movements of the lips, with said polymer system comprising a film-forming free radical polymer which is obtained from copolymerization of C₁-C₈ alkyl methacrylate monomers, which may be combined with acrylic acid, styrene, and α -methyl styrene when necessary.
18. A lipstick composition according to Claim 17, characterized by the fact that (meth)acrylates are to be selected among alkyl (meth)acrylates, and preferably C₁-C₂₀ alkyl [(meth)acrylates].
19. A lipstick composition according to Claim 18, characterized by the fact that (meth)acrylates are to be selected among alkyl (meth)acrylates, and preferably C₁-C₈ alkyl [(meth)acrylates].
20. A lipstick composition according to any of the claims identified as 17 to 19, characterized by the fact that the glass transition temperature of the polymer system shall be less than or equal to 10° C., and preferably less than or equal to 0° C.
21. A lipstick composition according to any of the claims identified as 17 to 20, characterized by the fact that the coating shall possess a hardness level which is less than or equal to 50, and preferably less than or equal to 35.
22. A lipstick composition according to any of the claims identified as 17 to 21, characterized by the fact that the minimum film-forming temperature of the polymer system shall be less than or equal to 15° C., and preferably less than or equal to 8° C.
23. A composition according to any of the preceding claims, characterized by the fact that the free radical polymer shall be dissolved.
24. A composition according to any of the claims identified as 1 to 23, characterized by the fact that the free radical polymer shall be dispersed.
25. A composition according to Claim 24, characterized by the fact that the free radical polymer shall exist in the form of particles within an aqueous dispersion.
26. A composition according to Claim 25, characterized by the fact that sizes of particles within the aforementioned aqueous polymer dispersion shall be situated between 10 and 500 nm, and preferably between 20 and 150 nm.
27. A composition according to any of the preceding claims, characterized by the fact that the polymer system shall solely consist of one or more free radical polymers.
28. A composition according to any of the claims identified as 1 to 26, characterized by the fact that the polymer system shall include at least one auxiliary film-forming agent.
29. A composition according to Claim 28, characterized by the fact that the auxiliary film-forming agent shall be a plasticizer.
30. A composition according to Claim 28 or 29, characterized by the fact that the auxiliary film-forming agent shall be a coalescing agent.
31. A composition according to any of the preceding claims, characterized by the fact that the level of film-forming free radical polymer shall vary from 1% to 60% by weight, with the weight of dry material in relation to the total weight of said composition preferably varying from 5% to 40%.
32. A composition according to any of the preceding claims, characterized by the fact that the Young's modulus of the coating shall be less than 200 Mpa, and preferably less than 100 Mpa.

33. A composition according to any of the preceding claims, characterized by the fact that elongation of the coating shall exceed 200% and shall preferably exceed 300%.
34. A method of applying make-up to a surface selected from a group consisting of skin, semi-mucous tissue, and/or mucous membranes, characterized by the fact that a polymer system or a composition including said polymer system according to any of the preceding claims is to be applied to said surface.
35. A method of providing non-therapeutic treatment of a surface selected from a group consisting of skin, semi-mucous tissue, and/or mucous membranes, characterized by the fact that a polymer system or a composition including said polymer system according to any of claims identified as 1 to 33 is to be applied to said surface.
36. Use of the previously indicated polymer system or a composition including said polymer system in accordance with one of the claims identified as 1 to 33 for manufacturing a composition intended for therapeutic treatment of the skin, semi-mucous tissue, and/or mucous membranes.
37. Use of a polymer system as defined within any of the claims identified as 1 to 33 within a composition capable of being applied to the skin, semi-mucous tissue, and/or mucous membranes, for the purpose of reducing transferring and/or spreading of said composition.